Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1-15 (Canceled)

Claim 16 (New): A method of forming a conductive path in a semiconductor device, comprising:

forming a first insulating layer on a semiconductor substrate;

forming a conductive member on the first insulating layer;

forming a second insulating layer on the first insulating layer and the conductive member so that the conductive member is covered by the second insulating layer;

forming an etching mask on the second insulating layer, the etching mask having an opening over the conductive member;

etching the second insulating layer using the etching mask in a reaction chamber, wherein a reaction chamber pressure is not less than about 100 mTorr, a reaction gas essentially consists of CHF_3 and CO, a flow ratio of CHF_3 and CO is about 15/85, and a flow rate of the reaction gas is not less than about 300 sccm, so that the second insulating layer under the opening of the etching mask is removed and an etch stop occurs; and

filling a removed portion of the second insulating layer with a conductive material to form the conductive path.

Claim 17 (New): A method of forming a conductive path according to claim 16, wherein the reaction chamber pressure is about 200 mTorr.

Claim 18 (New): A method of forming a conductive path according to claim 16, wherein the semiconductor substrate is biased by a high-frequency power source.

Claim 19 (New): A method of forming a conductive path according to claim 18, wherein the high-frequency power source is maintained at about 1600W.

Claim 20 (New): A method of forming a conductive path according to claim 16, wherein the second insulating layer is made of silicon oxide.

Claim 21 (New): A method of forming a conductive path according to claim 16, wherein the flow rate of CHF_3/CO is about 45/255 sccm.

Claim 22 (New): A method of forming a conductive path in a semiconductor device, comprising:

providing a semiconductor structure including a semiconductor substrate, an

insulating layer formed on the semiconductor substrate, and a conductive member formed in the insulating layer;

forming an etching mask on the insulating layer, the etching mask having an opening over the conductive member;

etching the second insulating layer using the etching mask in a reaction chamber, wherein a reaction chamber pressure is not less than about 100 mTorr, a reaction gas essentially consists of CHF_3 and CO, a flow ratio of CHF_3 and CO is about 15/85, and a flow rate of the reaction gas is not less than about 300 sccm, so that the insulating layer under the opening of the etching mask is removed to expose the conductive member and an etch stop occurs; and

filling a removed portion of the insulating layer with a conductive material to form the conductive path.

Claim 23 (New): A method of forming a conductive path according to claim 22, wherein the reaction chamber pressure is about 200 mTorr.

Claim 24 (New): A method of forming a conductive path according to claim 22, wherein the semiconductor substrate is biased by a high-frequency power source.

Claim 25 (New): A method of forming a conductive path according to claim 24, wherein the high-frequency power source is maintained at about 1600W.

Claim 26 (New): A method of forming a conductive path according to claim 22, wherein the second insulating layer is made of silicon oxide.

Claim 27 (New): A method of forming a conductive path according to claim 22, wherein the flow rate of CHF_3/CO is about 45/255 sccm.